

Recombinant murine Tumor Necrosis Factor-alpha (rm TNF-alpha)

Synonyms: Tumor necrosis factor ligand superfamily member 2 (TNFSF2), Cachectin, DIF, Necrosin, Cytotoxin

Introduction: Tumor necrosis factor is a cytokine involved in systemic inflammation and is a member of a group of cytokines that all stimulate the acute phase reaction. TNF is mainly secreted by macrophages. TNF causes apoptotic cell death, cellular proliferation, differentiation, inflammation, tumorigenesis and viral replication. TNF is also involved in lipid metabolism and coagulation. TNF's primary role is in the regulation of immune cells. Dysregulation and, in particular, overproduction of TNF have been implicated in a variety of human diseases, autoimmune diseases, insulin resistance and cancer.

Description: Recombinant murine TNF-alpha produced in *E.coli* is a soluble 156 amino acid protein (17.3 kDa) which corresponds to C-terminal extracellular domain of the full length transmembrane protein. The rm TNF-alpha is purified by standard chromatographic techniques.

Source: *Escherichia coli*

Physical Appearance: Sterile filtered white lyophilized (freeze dried) powder.

Formulation: Lyophilized from a 0.2µm filtered concentrated solution in 50mM TRIS, pH 8.0 + 250 mM NaCl. The sample size of 1µg contains Trehalose 5% (w/vol) for better recovery.

Solubility: It is recommended to reconstitute the lyophilized rm TNF-alpha in sterile H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Stability: Lyophilized rm TNF-alpha although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rm TNF-alpha should be stored at 4° C between 2-7 days and for future use below -18° C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity: Greater than 95.0% as determined by SDS-PAGE

Endotoxicity: The endotoxin level is less than 0.1 ng per µg (1EU/µg) determined by LAL method

Amino Acid Sequence: MLRSSSQNSS DKPVAHVVAN HQVEEQLEWL SQRANALLAN GMDLKDNLV VPADGLYLVY SQVLFKGGQC PDYVLLTHTV SRFAISYQEK VNLLSAVKSP CPKDTPEGAE LKPWYEPIYL GGVFQLEKGD QLSAEVNLPK YLDFAESGQV YFGVIAL

Biological Activity: The ED₅₀ as determined by the cytolysis of murine L929 cells in the presence of Actinomycin D is < 0.05 ng/ml, corresponding to a specific activity of 2 x10⁷ IU/mg.

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|-----------------|---------|--------|----------|
| <i>small</i> | 5 µg | Cat.N° | 12343010 |
| <i>medium</i> | 20 µg | Cat.N° | 12343014 |
| <i>large</i> | 100 µg | Cat.N° | 12343016 |
| <i>x-large</i> | 500 µg | Cat.N° | 12343017 |
| <i>xx-large</i> | 1000 µg | Cat.N° | 12343018 |

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